Spaced review and interleaving: An introduction

Version 1
Contents

What is spaced review? 3
What is interleaving? 4
How to plan and deliver using these methods 5
Curriculum plan example (Component 3: Issues in Mental Health) 6
Further reading 7
Student information sheet – What is interleaving and why should I use this method to revise? 8
What is spaced review?

Many teachers find that supporting students in recalling the content for Psychology is challenging and whilst students can do well in short-term recall tests they find it challenging to recall theories and studies later in the year - or indeed the exam. Spaced review is a method that takes advantage of how our memory works to increase the accuracy and detail of recall.

Research such as that by Kelley and Whatson (2013)\(^1\) has suggested extremely quick reviews of course material improves memory recall rapidly and that by getting students to revisit material every 10 minutes, with distractor tasks in between, we could revolutionise the way students learn.

Spaced review is a technique embedded over a longer period of time using the same principles of repetition to strengthen long-term memory recall. The principle underlying this is that students are using maintenance rehearsal to revisit material over time and thus strengthen the memory trace.

Ebbinghaus in 1885 suggested understanding how forgetting occurred could actually aid efforts to improve learning. He suggested that if you overlearn material you are less likely to forget it at a later date; we can use this principle to support students in preparation for the A Level exams by building in repetition into schemes of learning.

The following guide gives ideas about how and when to use spaced review to improve your students recall in A Level Psychology.

---

**Pros?**

- Improved outcomes for your students in external exams
- More engaging learning.

**Cons?**

- Takes time initially
- Students may find it more challenging

---

What is interleaving?

Interleaving, otherwise known as distributed practice, is a method used to revisit learning, put spaced review into practice and improve memory recall.

As Pan (2015) says ‘Mixing it up boosts learning’ compared to more traditional methods of block learning where students master one topic before moving on to the next in preparation for exams.

As you can see from the diagram to the right, learning is spread over time rather than concentrating on narrow topics one after the other.

How does interleaving work?

There are a few theories about the cognition behind interleaving. A few ideas according to Pan (2015) are:

Interleaving, “improves the brains ability to tell apart, or discriminate, between concepts. The brain continuously focuses on searching for different solutions… which better enables you to execute the correct response.”

“Interleaving strengthens memory association. The brain is continuously engaged at retrieving different responses and bringing them into short-term memory. Repeating that process can reinforce neural connections between different tasks and correct responses, which enhances learning.”

The beauty of interleaving is that you can embed it as little or as much as you like and tailor the interleaving to your students. The diagram above suggests mixing topics up entirely, which can prove highly effective. You can also mix blocking most of your lesson content with interleaved homework tasks that complement current learning and develop deeper understanding of prior topics.

How to plan and deliver using these methods

Students are often aware of material they have already covered and one challenge we face as teachers is how to make the material engaging whilst interleaving concepts and repeating exposure to material. They key to interleaving over time and embedding spaced review is developing material that is challenging and engaging.

This guide explains how to use the 'Mental Health spaced review worksheets teacher guide’ to embed these strategies in your curriculum and deepen students' knowledge whilst improving their long-term memory recall. The guide has a focus on reviews of learning and checking at different levels which can be adapted for your lessons as you wish.

These include:

- Starters
- Plenaries
- Extension
- Reflection
- Stretch opportunities

The aim of these resources is that you can ‘pick and mix' activities to suit your learners and build up their knowledge for the Issues in Mental Health unit.

The next page is aimed at students, explaining the benefits of spaced learning.
Curriculum plan example: Issues in Mental Health (Component 3)

Below is just an example of how to embed spaced review and interleaving into your scheme of learning for the component 3 element ‘Issues in Mental Health’. Each week the lessons the homework will be based on are marked with a purple box. The homework tasks are aimed to build on knowledge and become more challenging as the term progresses by combining concepts and presenting material in novel ways that enable students to think about the topics deeply. You could combine the resources in the mental health Student Handbook to create homework tasks.

<table>
<thead>
<tr>
<th>Lesson No. (1 hour)</th>
<th>Lesson content (Taught over 3 weeks)</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
<th>12</th>
<th>13</th>
<th>14</th>
<th>No of times covered</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Background: Historical views of mental illness and definitions</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Background: categorising mental disorders</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Key research: Rosenhan</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Applications: Characteristics of an affective disorder, a psychotic disorder and an anxiety disorder</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Assessment for learning on the historical context of mental health</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Background: The medical model</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Key research: Gottesman et al. (2010)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Applications: Biological treatment of one specific disorder</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Assessment for learning on the medical model</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Background: Alternative to the medical model – the behaviourist explanation of mental illness</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>Background: Alternative to the medical model – the cognitive explanation of mental illness</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>Background: Alternative to the medical model – humanist explanation of mental illness</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>Key research: Szasz (2011)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>Applications: Non-biological treatment of one disorder</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Further reading


http://gocognitive.net/interviews/benefits-interleaving-practice

https://newteachers.tes.co.uk/content/how-mix-your-teaching-get-better-results

https://classteaching.wordpress.com/2014/06/12/spacing-and-interleaving/
What is interleaving and why should I use this method to revise?

Ever crammed for an exam? Found it challenging? Interleaving is a method to use when revising to help you remember more for the exam and to understand it better as well!

By revisiting material from each topic several times, in short bursts, you can increase the amount you remember in the exams. The forgetting curve, to the right, shows how typically we forget a lot of the information we learn if we don’t revisit it at all. Each time you revise information it strengthens your memory recall as you can see by the ‘learning curve’.

When planning revision try to break units down into small chunks and split these over several days rather than cramming one topic all at once. This can mean doing just 10 minutes revision for each subject in a revision session and then the next day covering a different subtopic for each subject again.

You can create a revision timetable like the one below to organise your time so you can space learning from the first lesson right up to the exam.

<table>
<thead>
<tr>
<th>Subtopic</th>
<th>Week 1</th>
<th>Week 2</th>
<th>Week 3</th>
<th>Week 4</th>
<th>Week 5</th>
<th>Week 6</th>
</tr>
</thead>
<tbody>
<tr>
<td>History of mental health</td>
<td>Mon – 10 mins</td>
<td>Mon – 10 mins</td>
<td>Mon – 10 mins</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Medical model</td>
<td>Tues – 10 mins</td>
<td>Tues – 10 mins</td>
<td>Tues – 10 mins</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cognitive model</td>
<td>Tues – 10 mins</td>
<td></td>
<td>Tues – 10 mins</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Humanistic model</td>
<td>Mon – 10 mins</td>
<td></td>
<td></td>
<td>Mon – 10 mins</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Why spaced review works

Learning curve:
Every review slows the forgetting curve: creating permanent knowledge.

Forgetting curve:
We forget unreviewed knowledge quickly.
We’d like to know your view on the resources we produce. By clicking on the ‘Like’ or ‘Dislike’ button you can help us to ensure that our resources work for you. When the email template pops up please add additional comments if you wish and then just click ‘Send’. Thank you.

Whether you already offer OCR qualifications, are new to OCR, or are considering switching from your current provider/awarding organisation, you can request more information by completing the Expression of Interest form which can be found here: www.ocr.org.uk/expression-of-interest

OCR Resources: the small print
OCR’s resources are provided to support the delivery of OCR qualifications, but in no way constitute an endorsed teaching method that is required by OCR. Whilst every effort is made to ensure the accuracy of the content, OCR cannot be held responsible for any errors or omissions within these resources. We update our resources on a regular basis, so please check the OCR website to ensure you have the most up to date version.

This resource may be freely copied and distributed, as long as the OCR logo and this small print remain intact and OCR is acknowledged as the originator of this work.

OCR acknowledges the use of the following content: Square down and Square up: alexwhite/Shutterstock.com

Please get in touch if you want to discuss the accessibility of resources we offer to support delivery of our qualifications: resources.feedback@ocr.org.uk

Looking for a resource?
There is now a quick and easy search tool to help find free resources for your qualification: www.ocr.org.uk/i-want-to/find-resources/

www.ocr.org.uk/alevelreform
OCR Customer Contact Centre

General qualifications
Telephone 01223 553998
Facsimile 01223 552627
Email general.qualifications@ocr.org.uk

OCR is part of Cambridge Assessment, a department of the University of Cambridge. For staff training purposes and as part of our quality assurance programme your call may be recorded or monitored.

© OCR 2016 Oxford Cambridge and RSA Examinations is a Company Limited by Guarantee. Registered in England. Registered office 1 Hills Road, Cambridge CB1 2EU. Registered company number 3484466. OCR is an exempt charity.

A DIVISION OF CAMBRIDGE ASSESSMENT

L1000421

L0000819